

REMARKS

The present amendment is responsive to the Final Office Action dated June 29, 2006.

Independent claims 1, 10, and 17 have been amended to better define the invention. In particular, the amendments provide a method of drying crude clay ore at a recited temperature and recited flow rate for the heated air stream using a plurality of rotating paddles. The drying process of the invention is not taught or suggested by the prior art.

In the Final Office Action dated June 29, 2006, the Examiner has rejected the claims under §102 and §103 based on primary reference U.S. Patent Application Publication No. 2004/0129177 to Cadoret.

A claim is anticipated under 35 U.S.C. §102 if each claimed element is found in a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991); *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 138 (Fed. Cir. 1986). There must be no difference between the claimed invention and the reference disclosure, as viewed by an ordinary artisan. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d at 1576.

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness under 35 U.S.C. §103, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art

also suggests the desirability of the combination. M.P.E.P. § 2143.01(citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Applicant's independent Claim 1 recites a method of processing crude clay ore having a high grit content, comprising:

- drying crude clay ore by injecting the crude clay ore into a heated air stream having a flow rate through a dryer of between about five thousand cubic feet per minute and about fifty thousand cubic feet per minute (5,000 - 50,000 cfm), wherein a temperature of the air stream is maintained between 600°F and 1,000°F;
- pulverizing the crude clay ore into individual mineral particles substantially simultaneously with the drying step; and
- separating the individual mineral particles into respective product streams.

Independent Claims 10 and 17 contain similar recitations.

Cadoret fails to teach all of the recitations of independent Claims 1, 10, and 17. Cadoret describes a process for the dehydroxylation of aluminum silicate in which particles containing aluminum silicate are exposed to a temperature of at least 500°C and wherein the particles are in the form of a dry powder that is transported in a gas stream at a temperature of from 600°C to 850°C (1112°F to 1562°F), for a time which is sufficient to achieve the desired degree of dehydroxylation. Applicant's independent claims recite that crude clay ore is injected into a heated air stream maintained at a temperature between 600°F and 1,000°F.

Cadoret clearly does not teach drying instead teaches dehydroxylation. Cadoret fails to anticipate Applicant's invention.

Dehydroxylation or calcination is much more than the driving off of water. As known to those skilled in the art of the present invention, dehydroxylation causes the collapse of the crystal structure of a mineral and thereby causes a chemical change in the mineral. For example, kaolin is a hydrous material with about 14% water bound in the interstices of the crystalline structure thereof. When kaolin is dehydroxylated, the water is completely removed from the crystalline lattice, causing the crystalline structure to collapse and resulting in amorphous alumino-silicate, also referred to as metakaolin. Cadoret is silent as to how the heat is applied and for what range of temperature. In dehydroxylation, technically drying does occur because of the lower heating temperatures. However the material is heated to a higher temperature to physically alter the clay. Applicant, by maintaining a rate and range, does not allow this change to occur.

In addition, and as known to those skilled in the art, dehydroxylation of kaolin causes agglomeration, the creation of additional particles (impurities). Because dehydroxylation adds impurities, the dehydroxylation process of Cadoret teaches away from Applicant's invention which is directed to removing impurities from high grit content crude clay ore. One skilled in the art would not look to the dehydroxylation process of Cadoret to solve the problem addressed by Applicant's invention.

Thus, dehydroxylation, as taught by Cadoret, would change the chemical composition of kaolin being processed and would require an additional step to be performed *i.e.*, to remove particles (impurities) created by agglomeration. Thus, Cadoret does not teach or suggest the method of processing crude clay ore as recited in the claims.

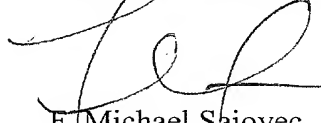
CONCLUSION

The concerns of the Examiner addressed in full, Applicant respectfully requests withdrawal of the outstanding rejections and the issuance of a Notice of Allowance forthwith. No fee is believed due. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220. The Examiner is

In re: Avant, Jr.
Serial No.: 10/648,706
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encouraged to direct any questions regarding the foregoing to the undersigned, who may be reached at (919) 854-1400.

Respectfully submitted,



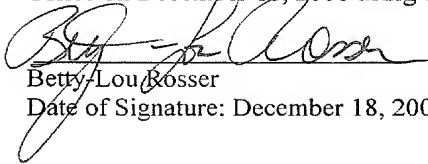
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CERTIFICATION OF ELECTRONIC TRANSMISSION
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I hereby certify that this correspondence is being transmitted electronically to the U.S. Patent and Trademark Office on December 18, 2006 using the EFS.



Betty Lou Rosser

Date of Signature: December 18, 2006